



"Terry Reim"
<terry@maui-tomorrow.org>

02/08/02 04:59 PM

To: <dlmr_cwrmm@exec.state.hi.us>
cc: "de Naie Lucienne" <laluz@maui.net>, "Ron Sturtz"
<ronsturtz@aol.com>, "Kapua Sproat" <ksproat@earthjustice.org>
Subject: Information Update on Central Maui Wells

RECEIVED

COPIES OF WATER
RESOURCES

February 8, 2002

Dear Chairman Coloma-Agaran and the CWRM:

Attached is a revised section (Central Maui only) of the CWRM Well database (12/7/01) downloaded from the your Website.

Maui Tomorrow's Ka Waiola Project, in its efforts to obtain more current and more accurate information concerning Central Maui wells, has added 2 columns of updated information (in yellow), the results of initial research of various public and private records, as well as interviews with well owners and tenants/employees at well locations.

During interviews, a number of subjects indicated that they had replied to the Commission's written request for current well data in the wake of Maui Meadows Homeowners' Association petition for designation of the I'ao and Waihe'e Aquifers as Water Resource Management Areas. Additionally, a number of subjects indicated that they have been filing monthly reports to the Commission that have apparently not been reflected in the Database.

While the revised document attached represents only our very initial research in a long-term project, it seems prudent to forward it to you at this time for entry into the public record and for consideration in your determination of the petition.

Since the CWRM Website now indicates that the Database is not presently available for download online, please provide me, as a representative of Maui Tomorrow, with your monthly updated Database at this email address. We trust the revised Database for February will include data submitted in both monthly reports you have been receiving, as well as responses to your recent letter.

Sincerely,

Terry Reim
Ka Waiola Technical Coordinator
v: 808.579.9417
c: 808.298.3533



winmail.dat



"Chris Baz"
<eco@maui.net>

02/08/02 01:27 PM

To: <dlmr_cwrn@exec.state.hi.us>
cc: <terry@maui.tomorrow.org>
Subject: water designation

RECEIVED

02 FEB 12 A 9:08

Dear Chairman Coloma-Agaran and Commissioners:

This comes in support of the Maui Meadow's Homeowners' Association petition requiring the CWRM to designate the 'Iao and Waihe'e aquifers as state water management areas.

As a 33 year resident of Maui and a fruit orchard farmer, I know water is our most precious resource. Continued development and population growth is a problem.

A study must be done now, before any more development is approved, to determine whether Maui has enough water.

Your designation of 'Iao and Waihe'e aquifers as state water management areas is critical.

thank you

Chris Baz

Ulupalakua Orchards Farm

PO Box 906

Kula, Hi, 96790

878-1059



laluz@maui.net
(Lucienne deNaie)

02/08/02 07:03 PM

To: dlnr_cwrmm@exec.state.hi.us

cc:

Subject: Comments on 'Iao Aquifer designation

RECEIVED

02 FEB 11 10:27

2/7/2002

CWRM

P.O. Box 621

Honolulu, HI 96809

Maui Tomorrow Ka Waiola Project

P.O. Box 791180

Pa'ia, HI 96779

572-0331/ laluz@maui-tomorrow.org

Dear Chairman Coloma-Agaran & Commissioners-

This testimony is an up date of earlier information submitted at the Commission's January 9 meeting in Maui. Once again, we would like to urge the Commission as part of their 'Iao Aquifer petition study, to request pumping data not only for privately operated wells within the Waihe'e and 'Iao aquifer areas, but also those within the Kahului aquifer area that border the 'Iao aquifer and are within the pumping radius zone of County well fields.

There are 16 wells within this immediate Central Maui area (total pumpage of 1.388 mgd) for which we have been able to verify some pumping. An updated data base with Ka Waiola project research data has been sent to you separately by email.

Dozens of additional well usages in the Kahului vicinity remain unverified. Useful information remains to be discovered. For instance, according to an owner's report, a shallow (30' deep) hand dug well (5328-25) used for backyard irrigation in Kahului produces fresh water, while many surrounding wells are brackish.

In addition there are several industrial sources and agricultural use sites in Kahului aquifer near the 'Iao aquifer boundary that have considerable usage reported which we have been unable to independently verify. These include the Maui Land and Pine Cannery well and shaft (5328-28 & 5328-01) which have a listed use in Tom Nance's 1997 report for Maui Lani of 1.735mgd.

A number of the institutional well owners (County Parks, assisted living facilities, homeless shelter etc) who have irrigation wells stated that they made regular monthly reports to CWRM that do not seem to be included in the online version of the CWRM data base that we have previously accessed. There are also wells listed as "unused" in the CWRM database that are reporting current use such as 5230-01 (Ka Hale A ke Ola homeless shelter) in 'Iao aquifer and 5327-10 (Kanaha Pond) in Kahului aquifer. Our research has verified that both these sources are being used and have been for some time. We assume that these oversights are due to lack of CWRM staff time for data input.

The Ka Hale Ola staff were told (they didn't indicate by whom- county or state) that their well was not in the 'Iao aquifer and that was why they could get a permit. However, it is listed in the CWRM data base as being within the 'Iao 's boundary , appears to be within the pumping radius of the County's Mokuahau Well field and it has a depth of 300 ft similar to the County's Kepaniwai well (5332-05), which is also nearby. It's initial CL levels in the CWRM data base are low(30ppm) and its 10' size gives it a



"Megan Loomis
Powers"

<meganloop@hotmail.
com>

To: DLNR_CWRM@exec.state.hi.us

cc: mailto:terry@maui-tomorrow.org

Subject: testimony in support of water management area

02/08/02 03:23 PM

Please respond to
MeganPowers

RECEIVED

32 FEB 11 AIO : 27

COMMISSIONER OF WATER
RESOURCES

Dear Chairman Coloma-Agaran and Commissioners,

As a 32 year resident of the north shore of Maui I have observed that development on the dry side of Maui gets priority over the use of water on the island. Developers, in pursuit of the big, fast buck have payed off polititions to change zoning and to permit high-end resorts and housing developments, that are not in accordance with the Community Plan, and that take away from the quality of life of the long-term, not-so-wealthy residents. Untruthful Aquifer Analysis Reports from the past led the county planners to believe that there was more water available than there actually was, thus allowing for the permitting of more development than the Iao and Waihee aquifers can sustain. We are now suffering those consequences. The Iao and Waihee aquifers are currently being pumped beyond their sustainable yield, a couple of wells have already been condemned and the salinity levels are rising all across the aquifer. The county has not demonstrated the ability to manage these aquifers smartly or sustainably.

I am concerned that if the central Maui aquifers (Iao, Waihee, and others) are destroyed by poor management, that the county will have to turn to the East Maui aquifers to supply the already established need. We residents of the wet, north shore already have a serious water managment problem. We have no legal access to water and our streams are dry due to the total diversions by A&B for agriculture ... phasing into development. We cannot agree to provide water to the rest of the island when we have none ourselves! Hopefully, sustainable water management and fair distribution of water will become established island-wide.

Until then....Although I would prefer that Maui County keep control of it's water, it is clear that we cannot trust paid-off polititions to watchover our water. It is like letting the fox guard the hen house. Please save us from ourselves and designate the Iao and Waihee Aquifers as "state water management areas." If the county learns good, sustainable water management technique from the state perhaps we won't need to designate the rest of the island as well.

Thank you for receiving my testimony.

To a lush and sustainable future,

Megan Powers
President
Hawaiian Health Products



"Michael Reed Gach"
<michael@acupressur
e.com>

To: <dlr_cwrn@exec.state.hi.us>
cc: <terry@maui-tomorrow.org>
Subject: Iao and Waihe'e aquifers

02/08/02 09:25 PM
Please respond to
"Michael Reed Gach"

RECEIVED

02 FEB 11 10:27

DEPARTMENT OF WATER
AND LAND
SHEET

Your designation of 'Iao and Waihe'e aquifers as state water management areas is critical. I support Maui Meadows Homeowners' Association petition requiring the CWRM to designate the 'Iao and Waihee Aquifers as State Water Management areas.

Barbara and Michael Reed Gach, Ph.D.
Founder of the Acupressure Institute
Email: gach@acupressure.com



Mary Anne Doane-Mau
<manaomau@juno.co
m>

To: dlnc_cwrn@exec.state.hi.us
cc:
Subject: Designating

02/08/02 04:53 PM

RECEIVED

02 FEB 11 A10:27

Aloha, Please note that Jacob Mau (DLNR ret.) and I are in favor of CWRM designating the Iao and Waihe'e Aquifers as a State Mgmt. area. Mahalo, Mary Anne Doane-Mau.

Also, was Phillip ? or was his last name Phillips on the news the other night speaking about the low water tables

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2/7/2002

CWRM
P.O. Box 621
Honolulu, HI 96809

Maui Tomorrow Ka Waiola Project
P.O. Box 791180
Pa'ia, HI 96779
572-8331/ laluz@maui-tomorrow.org
sent via email & fax

Dear Chairman Coloma-Agaran & Commissioners-

This testimony is an up date of earlier information submitted at the Commission's January 9 meeting in Maui. Once again, we would like to urge the Commission as part of their 'Iao Aquifer petition study, to request pumping data not only for privately operated wells within the Waihe'e and 'Iao aquifer areas, but also those within the Kahului aquifer area that border the 'Iao aquifer and are within the pumping radius zone of County well fields.

There are 16 wells within this immediate Central Maui area (total pumpage of 1.388 mgd) for which we have been able to verify some pumping. An updated data base with Ka Waiola project research data has been sent to you separately by email.

Dozens of additional well usages in the Kahului vicinity remain unverified. Useful information remains to be discovered. For instance, according to an owner's report, a shallow (30' deep) hand dug well (5328-25) used for backyard irrigation in Kahului produces fresh water, while many surrounding wells are brackish.

In addition there are several industrial sources and agricultural use sites in Kahului aquifer near the 'Iao aquifer boundary that have considerable usage reported which we have been unable to independently verify. These include the Maui Land and Pine Cannery well and shaft (5328-28 & 5328-01) which have a listed use in Tom Nance's 1997 report for Maui Lani of 1.735mgd.

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We assume that these oversights are due to lack of CWRM staff time for data input.

5230-01 need to verify
The Ka Hale Ola staff were told (they didn't indicate by whom- county or state) that their well was not in the 'Iao aquifer and that was why they could get a permit. However, it is listed in the CWRM data base as being within the 'Iao 's boundary, appears to be within the pumping radius of the County's Mokuahau Well field and it has a depth of 300 ft similar to the County's Kepaniwai well (5332-05), which is also nearby. It's initial CL levels in the CWRM data base are low(30ppm) and its 10' size gives it a moderate pumping capacity.

This pumpage combined with the other 5 County Parks wells that are within 'Iao boundaries (total pumpage .43mgd) could be a factor that the County should take into account when it raises pumping demands on County municipal wells during times of scarce rainfall. It seems imprudent to dismiss other withdrawal sites in 'Iao, Waihe'e and Kahului aquifers as having an inconsequential effect on 'Iao capacity (as our County Water Dept has done publicly in the past). It would seem from USGS testimony at past hearings that further research is imperative to better management. Designation as a water management area could help provide opportunities for that research.

Our research also indicates Kanaha Pond well (also listed as "unused") has varied pumpage (depending upon seasonal rain) of up to 1mgd when used. Brackish water pumped is returned to pond area to replenish its volume and it could be assumed that this pumping is therefore directly recharging the available supply of underground water in the area. However, further research would make it appear that various factors come into play that could affect the Kanaha well's impact on the water table. The Kanaha staff biologist reported high transevaporation rates for the pond area- rates that often outstrip the volume of pumped water that is being put into the pond. Therefore, the Kanaha pumping would need to be seen as having the potential to cause a net withdrawal from the aquifer. Kanaha staff also reports the presence of numerous underground freshwater springs in the area, which may be interrelated to waters originating in the nearby 'Iao aquifer. Continued overpumping of 'Iao aquifer could have long term effects on the viability of Kanaha pond as a habitat area and more research is needed.

In conclusion:

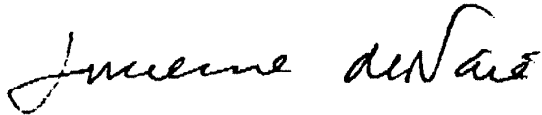
The variety and amount of additional pumping taking place within 'Iao, Waihe'e and Kahului aquifers that our few months of research has revealed warrants continued efforts to improve management of the resource. We see the CWRM as the only agency legally mandated to provide this ongoing scrutiny through the Water Management Area designation process.

3

The source waters of Iao aquifer appear to be hydrologically connected to waters held in the surrounding aquifers of Waihe'e, Kahului and Waikapu. Demand for fresh water on Maui has more than tripled in 25 years and is rising exponentially. The County is proposing further withdrawals from existing wells in north Waihe'e (5731-02, 3 & 4), future wells in the area of Kahakuloa and potential use of a Waikapu well (5131-01). In addition, numerous private developments proposed for the South and Central Maui area are anxious to meet their water needs and may look to lands they own within Iao, Waihe'e, Waikapu or Kahului aquifers to site development wells.

Maui's taxpayers are tired of the poorly researched, piecemeal planning that has characterized past management of these important public resources. It is time that a master planning approach to water management was begun on Maui and any future withdrawal sites are well selected, well monitored and well regulated. The State has ample cause to assume this much needed role and we urge them to act.

Thank you for this opportunity to comment,



Lucienne de Naie
Maui tomorrow
Ka Waiola Project

Iao Aquifer

February 8, 2002

CWRM

Fax #: 808-587-0219

Dear Chairman Coloma-Agaran and Commissioners:

I support Maui Meadows Homeowners' Association petition requiring the CWRM to designate the Iao and Waihee Aquifers as State Water Management areas.

This is an important step to help preserve quality and sustained growth.

Thank you for representing the people's interest.

Rob Story

PMB 327, 120 Hana Hwy #9

Paia, HI 96779

(808) 572-0992

A handwritten signature in black ink, appearing to read "Rob Story", with a long horizontal flourish extending to the right.

Christina Hemming
PO 791114
Paia, Hi.96790

RECEIVED
02 FEB 0 P 1:54

Commission on Water Resource Management
PO box 621
Honolulu, Hi 96809

February 7, 2002

Dear Chairman Coloma-Agaran and Commissioners,

Thank you for accepting testimony regarding the designation process for the Iao aquafer system. I was happy to attend the public meeting held on Maui, November 14, 2001, and presented public testimony at that time. After the presentation by the Commissions staff, it was very clear to the public, as well as Mr. Anderson the Director of the State Department of Health, that the designation of Iao aquafer must be done in order to maintain a healthy long term source of drinking water for the current users. As everyone is aware, the long term sustainability and health of the Iao aquafer, which is comprised of several interdependant aquifers must be managed wisely. They must not and can not be delineated from one another. Potable water and stream life must be protected and preserved in order for the citizens of this island to survive and use the source of all life wisely for the long term sustainability of the people of Maui, Hawaii. The State must designate to protect the Iao aquafer.

Here is my summary of important issues:

U.S. Geological survey, Exhibit 10 "The amount of groundwater that can be pumped over the long term depends on many factors. Some of these factors include the distribution of pumpage, dynamic flow of ground water, and climactic variability. Current values are based on an analytical model with simplifying assumptions that ignore these factors."

The Maui Department of Water Supply, and its Board of Directors, *does not* have the authority to manage water resources on Maui. The Department of Water Supply is a utility company. While DWS does not manage the water resources here, it attempts to provide water for development, while not limiting or restricting building permits based upon water availability. This places the County in a vulnerable position.

Contradicting the U.S Dept. of Interior, Exhibit 7, #3, Mr. Craddick writes "We realize that there has been a fairly lengthy time of low rainfall during which water levels have responded accordingly. Rainfall patterns should not translate to a need for designation."

In Section 13-171-7 Ground water criteria for designation: Iao aquafer has all the 8 listed criteria for designation. Again, all 8 criteria. In considering the need to act in a timely manner, the State Water Commission must designate Iao aquafer as a Mangement Area, in order to avoid possible costly litigation in the near future.

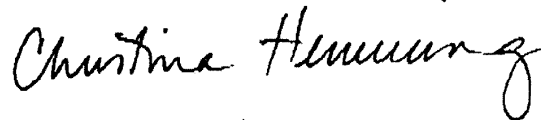
Hotel and other Vacation Rental developments use a disproportionate amount of water. Visitors are not informed or invested in using water wisely. I have seen one person use up to 6 towels in one locker room visit. "Health Club/Spas" provide services which are water use intensive, with some sessions using up to 25 min of water to shower clients with a Vichy shower (7 headed shower). Reusing grey water is not done in most existing developments.

There are no signs at any of the public showers to inform people to turn off the shower when done, or to limit and conserve water.

West Maui taro farmers have lost valuable water in streams and perennial streams which have led to higher water temperatures and an increase in susceptibility for crop disease. Visitor and industrial development has placed a burden and diversion away from historical uses of water, which included stream life, near shore ocean life and the integrated cultural uses of the stream life for the Hawaiian people.

In summary I trust that the decision to designate the Iao aquafer as a management Area will be an easy one made with the present moment and future of Maui in mind.

Thank you very much,



Christina Hemming



Daniel Grantham
<dannyy@flex.com>

02/08/02 11:41 AM

To: dlnr_cwrn@exec.state.hi.us

cc:

Subject: CWRM comments - Feb 8 deadline

RECEIVED

32 FEB 8 P2:50

Dear Chairman Coloma-Agaran and Commissioners:

Sierra Club, Maui Group, Hawaii Chapter supports the Maui Meadows Community Association's efforts to promote more effective protection and management of the 'Iao Aquifer and its related hydrological fields through designation of 'Iao and surrounding Central Maui aquifers as a State Water Management Area. Under state law, Hawaii's waters are held in public trust with the State Legislature and Commission on Water Resource Management acting as Trustees. We urge the Commission to assume its responsibilities and exercise its powers to protect the long term health of Maui's most significant available water resource.

Over 50% of Maui's population is dependent upon the waters of the 'Iao Aquifer and its related hydrological fields for domestic, agricultural and industrial use. For the past 25 years the sustainable availability of these waters have been consistently overestimated and overpromised to Central and South Maui developments. Declining fresh water levels and rising chloride levels in the wells that serve the Central Maui Water project have lead to current citizen efforts to petition the State of Hawaii to designate 'Iao a Water Management Area as provided by the State Water Code.

Maui County's management of 'Iao aquifer has triggered designation efforts four times in the past 15 years, resulting in a probationary review of its management practices being set in 1997. There is no doubt that conditons in the 'Iao and Waihe'e aquifer meet a number of the state water code criteria to iniate designation proceedings. It appears that only pressure from large corporate landowners and a number of Maui County policy policy makers has turned the CWRM aside from continuing designation proceedings in the past. This has not been in the best interests of resource protection.

Sierra Club Maui representatives testified at the 1997 'Iao designation that without designation the state should not count on Maui County agencies to reduce water consumption rates to the point that Iao Aquifer would no longer be jeopardized. This has proven to be the case in the intervening 4 years. In 1997 County BWS was pumping 21mgd from 8 wells in 'Iao aquifer; today, they are pumping over 17.5mgd from 'Iao and 3.97mgd from several wells in Waihe'e aquifer (just over the imaginary border that divides Waihe'e and 'Iao). In truth, the same overpumping continues in the joint 'Iao/Waihe'e hydrological area, and saltwater intrusion continues to rise. Records clearly illustrate that over the 25 year history of the Central Maui Joint Venture water delivery system (which carries 'Iao well water to South and central maui) County planners and councils have continually approved more projects than they had 'Iao water supplies to service. As a consequence, the County BWS has been forced to overpump 'Iao & Waihe'e sources. In addition, the County fails to account for private withdrawals of water from 'Iao or Waihe'e aquifers or the many withdrawals in nearby Kahului aquifer. It's simply a case of too many straws in one glass and no one in charge.

Sierra club maui Group hopes that CWRM members will proceed to designate the 'Iao and Waihee aquifers and works out a fair cost sharing arrangement with all concerned to implement the management program this irreplaceable resource deserves. Future generations are counting on you.

Chair of Sierra Club, Maui Group

Valley Farm

P.O. Box 485

Ha'ikū, Hawai'i 96708

808-572-1609

February 7, 2002

Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii 96809
Fax: 808-587-0219

Dear Chairman Coloma-Agaran and Commissioners:

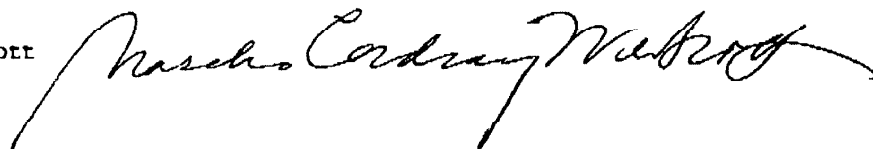
We support the designation of the 'Iao and Waihe'e aquifers as State Water Management areas. Reports of rising salt water levels in these aquifers makes clear this valuable public resource has been mismanaged. Please inform us of any meetings when this issue will be addressed.

Sincerely,

Greg Westcott



Masako Cordray Westcott



FROM:

FAX NO. :

Feb. 08 2002 10:31AM P1

Melody Farm

2441 Lilihoi Road, Ha'iku, Maui, Hawaii 96708

(808) 572-1804 phone & Fax

<melofarm@aloha.net>

RECEIVED

02 FEB 8 10:21

COMMISSION OF WATER & RESOURCE MANAGEMENT
HONOLULU, HI

7 February 02

Commission of Water & Resource Management (CWRM)
Honolulu, HI
Fax #: 808-587-0219

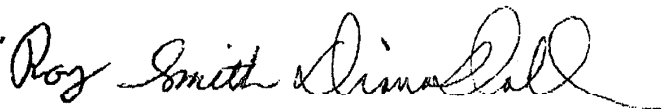
Dear Chairman Coloma-Agaran and Commissioners:

This comes in support of the Maui Meadow's Homeowners' Association petition requiring the CWRM to designate the 'Iao and Waihe'e aquifers as state water management areas.

As long-time residents of Maui and organic farmers, we know water is our most precious resource. Continued development and population growth are competing with current water needs for farming, let alone with the possibility of becoming agriculturally sustainable. A study must be done now, before any more development is approved, to determine whether Maui has enough water to continue the current rate of growth, as well as to insure agricultural sustainability. Your designation of 'Iao and Waihe'e aquifers as state water management areas is critical.

Mahalo for your concern and support.

Sincerely,



Roy Smith, past President, Hawaii Organic Farmers Association
Diana Dahl, Trustee, Hawaii Organic Farmers Association (HOFA)

Please note: We are sending this both by FAX and Email to ensure it is received.

RECEIVED

Fax #: 808-587-0219

02 FEB 8 AIO: 21

Dear Chairman Coloma-Agaran and Commissioners:

This comes in support of the Maui Meadow's Homeowners' Association petition requiring the CWRM to designate the 'Iao and Waihe'e aquifers as state water management areas. As long-time residents of Maui and organic farmers, we know water is our most precious resource. Continued development and population growth is competing with current water needs for farming, let alone the possibility of becoming agriculturally sustainable. A study must be done now, before any more development is approved, to determine whether Maui has enough water to continue the current rate of growth, as well as to insure agricultural sustainability. Your designation of 'Iao and Waihe'e aquifers as state water management areas is critical.

Mahalo for your interest and support.

Sincerely,

A handwritten signature in cursive script that reads "Joani Rodgers". The signature is written in dark ink and is positioned below the word "Sincerely,".



Stefano Segre
<manish@mauigateway.com>

To: dlnr_cwrn@exec.state.hi.us
cc:
Subject: (no subject)

02/06/02 10:28 PM
Please respond to
manish

RECEIVED

02 FEB 8 A10:05

DEPARTMENT OF WATER
RECEIVED

Dear Commissioners:

This letter is in support of the Maui Meadow's Homeowners' Association petition requiring the CWRM to designate the 'Iao and Waihe'e aquifers as state water management areas.

I have lived on Maui nearly 20 years. The increase in development and spiraling population growth has placed demands on Maui's water. We need to find out whether Maui has enough water to sustain this pattern of growth. Your designation of 'Iao and Waihe'e aquifers as state water management areas is critical.

Mahalo,
Stefano segre



"Martha E. Martin"
<mem@hgea.org>

02/06/02 06:05 PM

To: dlnr_cwrn@exec.state.hi.us
cc: terry@maui-tomorrow.org
Subject:

RECEIVED

02 FEB 8 10:05

Dear Chairman Coloma-Agaran and Commissioners,

I support the Maui Meadows Homeowners Ass'n petition requesting the CWRM to designate the Iao and Waihee Aquifers as State Water Management areas.

Since 1963 I have lived on Maui. Development has been approved without good planning to manage island water resources, because we lack information on the boundaries of the aquifers, how the aquifer recharges, and how much water is being withdrawn by public and private use. Development for private uses has blocked development for Hawaiian homes use.

Water is life. The limits of our water supply need to be known so that Maui can plan wisely and fairly.

Mahalo,
Martha E. Martin
P.O.Box 790300
Paia, Maui, HI 96779



melody farm
<melofarm@aloha.net>

02/08/02 12:12 AM

To: <
cc: <mailto:terry@maui-tomorrow.org>
Subject: Iao Aquifer Designation

RECEIVED

02 FEB 8 10:05

Commission of Water & Resource Management (CWRM)
Fax #: 808-587-0219

COMMISSION OF WATER
RESOURCE MANAGEMENT

Dear Chairman Coloma-Agaran and Commissioners:

This comes in support of the Maui Meadow's Homeowners' Association petition requiring the CWRM to designate the 'Iao and Waihe'e aquifers as state water management areas.

As long-time residents of Maui and organic farmers, we know water is our most precious resource. Continued development and population growth are competing with current water needs for farming, let alone with the possibility of becoming agriculturally sustainable. A study must be done now, before any more development is approved, to determine whether Maui has enough water to continue the current rate of growth, as well as to insure agricultural sustainability. Your designation of 'Iao and Waihe'e aquifers as state water management areas is critical.

Mahalo for your concern and support.

Sincerely,

Roy Smith, past President, Hawaii Organic Farmers Association
Diana Dahl, Trustee, Hawaii Organic Farmers Association (HOFA)

2441 Lilikoi Road
Haiku, HI 96708
808-572-1804, phone & fax

Please note: We are sending this both by FAX and Email to ensure it is received.



"Becky"
<beccap@aloha.net>

02/07/02 08:29 PM

To: <dlmr_cwrn@exec.state.hi.us>
cc:
Subject: Water on Maui

RECEIVED

02 FEB 8 10:05

Dear Commissioners:

This letter is in support of the Maui Meadow's Homeowners' Association petition requiring the CWRM to designate the 'Iao and Waihe'e aquifers as state water management areas.

We have lived on Maui for 30 years. The increase in development and spiraling population growth has placed huge demands on Maui's water. We need to find out whether Maui has enough water to sustain this pattern of growth. Your designation of 'Iao and Waihe'e aquifers as state water management areas is critical.

Mahalo,
Rebecca and Godwin Pelissero
Ha'iku, HI



Yolanta Marche~
<YMARCHE/000207044
3@MCIMAIL.COM>

02/08/02 09:33 AM

To: dlnr_cwrn <dlnr_cwrn@exec.state.hi.us>
cc: terry <terry@maui-tomorrow.org>
Subject: I support...

RECEIVED

02 FEB 8 10:07

I support the Maui Meadows Homeowners' Association petition requiring
the CWRM to designate the 'Iao and Waihee Aquifers as State Water
Management areas.

Yolanta Marche'
2895 South Kihei Road, unit 103
Kihei, HI
879-4734



starthrower3@webtv.net
(Ilona Lapinsky)

02/07/02 01:08 AM

To: dlnc_cwrn@exec.state.hi.us
cc:

Subject: Iao and Waihee Aquifers

RECEIVED

72 FEB 8 10:07

To Chairman Coloma-Agaran and Commissioners:
I support the Maui Meadows Homeowners
Association's petition requiring the CWRM to
designate the Iao and Waihee Aquifers as State
Water Management areas. It seems it would
be a sensible thing to do.
Sincerely, Astrid Watanabe
2618 Pololei PL
Haiku HI 96708

COPIES SENT
R. J. AG. 7/10

DSF

382 Kaunakahi Drive, Wailuku, Hawaii 96793

RECEIVED

February 1, 2002

02 FEB 7 A10 : 02

COMMISSION ON WATER
RESOURCE MANAGEMENT

Mr. Gilbert Coloma-Agaron
State of Hawaii
Department of Land and Natural Resources
1151 Punchbowl Street
Honolulu, HI 96813

RE: Designation of the Iao Aquifer

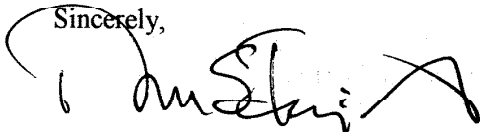
Chairman Coloma-Agaron and Members of the Commission on Water Resource
Management:

My name is Don Fujimoto. I am submitting testimony today against the designation of
the Iao Aquifer for the following reasons:

1. I do not see a need for intervention by the State to manage withdrawals by competing users. The Department of Water Supply is the only entity withdrawing water from this area. There are no competing users. The amount of water pumped from the aquifer is in complete control of the Department, which in the past couple of years, have been able to satisfactorily reduce its pumpage below 90% of allowable limits.
2. The intervention, through designation, by the State will add another layer of bureaucracy to the governmental system. This is an issue concerning a Maui County resource. Management and control should remain at the County level.
3. Lastly, this request to the Commission for designation of the Iao Aquifer is an attempt by a small group of anti-growth activists who have decided to use designation as their platform to stop development on Maui. I find it ironic that they are willing to relinquish local jurisdiction of one of Maui's most valuable resources and still actively seek to control everything else.

Thank you for the opportunity to submit testimony on this issue. Please contact me should you have any questions.

Sincerely,



Don S. Fujimoto

Tropical Orchid Farm, Inc.

Huelo, Maui

Commission on Water Resource Management
Fax: (808) 587-0219

Jeffrey Parker
President, Tropical Orchid Farm, Inc.
Fax: (808) 572-8917

Dear Chairman Coloma-Agaran and Commissioners,

I'm writing today to urge designation of the Iao and Waihee Aquifers as State Water Management areas. I understand that there is a petition to this effect submitted by the Maui Meadows Homeowners Association.

Unfortunately, the Maui County BWS, as well as the Maui County Planning Commission, the Maui County Planning Department, and even the Maui County Council continue to be mired in a "develop - no matter what the costs" mentality. Time and time again they have been warned of the dire situation regarding the Iao and Waihee Aquifers, and of the possibility of permanent damage to this priceless resource. Nonetheless, they continue to approve all or most development projects that come before them, without regard to the impacts to the aquifers resulting from increased demand caused by these approvals.

There seems to be a feeling that they can go ahead with these approvals because "new water sources in East Maui will be developed". As a party to the lawsuit challenging the East Maui Development Project, I can report to you that the legal issues in that case are far from being settled. In fact, in light of the new Waiahole Supreme Court Decision, the County of Maui may have no legal right whatsoever to transfer East Maui water to the dry regions of the Island. **This means that all new approvals for resorts and housing developments CONTINUE to rely on water from Iao and Waihee Aquifers.**

A fresh water aquifer is too precious a resource, and the damage caused by salt-water intrusion is too permanent, to allow small-town petty politics to determine its fate. Therefore I see no other responsible course of action - a bigger entity, the State of Hawaii, must take over management of this irreplaceable resource before it is too late. Please designate now.

Sincerely,

Jeffrey B. Parker,

Pres., T.O.F., Inc.

State Commission on Water Resource Management
P.O. Box 621
Honolulu, HI 96809
Fax #: 808-587-0219


Feb. 7, 2002

As a 20 year resident of Maui County, I demand that the Iao and Waihee Aquifers be designated as State Water Management areas!

Plundering of water resources by special interest groups has predominated Maui County politics for the past 20 years. I personally have lost a large sum of money because I was denied a water meter, while large developers have no problem getting the majority of new meters.

Do not act like Enron !!!

Sincerely,



Steve Slater
P.O. Box 790913
Paia, HI 96779

CWRM
P.O. Box 621
Honolulu, HI 96809
Fax #: 808-587-0219

2/6/02

The Iao & Waihee Aquifers must be made State Water Management Areas, because too much water has been going to big development while disregarding the needs of the community.

Jette Slater
HC1 Box 67
Haiku, HI 96708

**EARTHJUSTICE**

BOZEMAN, MONTANA DENVER, COLORADO HONOLULU, HAWAII
JUNEAU, ALASKA NEW ORLEANS, LOUISIANA SAN FRANCISCO, CALIFORNIA
SEATTLE, WASHINGTON TALLAHASSEE, FLORIDA WASHINGTON, D.C.
ENVIRONMENTAL LAW CLINIC AT UNIVERSITY OF DENVER
ENVIRONMENTAL LAW CLINIC AT STANFORD UNIVERSITY

FAX TRANSMITTAL

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TO: Gilbert Coloma-Agaran, Chair
Linnel Nishoka, Deputy Director
Commission on Water Resource Management

FAX NO.: 587-0219

FROM: Kapua Sproat

DATE: February 6, 2002

RE: Maui Meadows Homeowners Association's Petition

Number of pages (including this cover memo): -4-

If there are any problems with transmission, please call Everett at (808) 599-2436.

ATTACHMENT: February 6, 2002 letter regarding Maui Meadows Homeowners Association's Petition for the designation of the 'Īao and Waihe'e Aquifers as groundwater management areas.

**EARTHJUSTICE**

BOZEMAN, MONTANA DENVER, COLORADO HONOLULU, HAWAII
JUNEAU, ALASKA NEW ORLEANS, LOUISIANA SAN FRANCISCO, CALIFORNIA
SEATTLE, WASHINGTON TALLAHASSEE, FLORIDA WASHINGTON, D.C.
ENVIRONMENTAL LAW CLINIC AT UNIVERSITY OF DENVER
ENVIRONMENTAL LAW CLINIC AT STANFORD UNIVERSITY

February 6, 2002

BY FACSIMILE TRANSMITTAL

Fax: (808) 587-0219

Gilbert Coloma-Agaran, Chair
Linnel Nishioka, Deputy Director
Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, Hawai'i 96813

**Re: Maui Meadows Homeowners Association's Petition for Designation of
the 'Iao & Waihe'e Aquifers as Groundwater Management Areas**

Dear Chair Coloma-Agaran and Deputy Director Nishioka:

Attached is a copy of "Makena Rezoning Decision Delayed," which was published in the Maui News on February 2, 2002. On page 2, David Craddick, Director of the Maui County Department of Water Supply, is cited as saying that "the Iao aquifer, the main source of drinking water for Central and South Maui, has reached its limit." Craddick was also quoted as saying that the water for the proposed resort will not be coming from the 'Iao aquifer.

Please consider this article and Maui County Department of Water Supply's position in evaluating Maui Meadows Homeowners Association's petition to designate the 'Iao and Waihe'e aquifers as groundwater management areas.

Don't hesitate to contact me if you have any questions or require additional information.

Me ke aloha,

Kapua Sptoot

Attachment

cc: Jim Williamson
Maui Meadows Homeowners Association

The Maui News
February 2, 2002

Makena rezoning decision delayed

Several councilors want to amend bill to address concerns over development

By MARK ADAMS
Staff Writer

WAILUKU — The Maui County Council delayed a decision Friday on Makena Resort's plan to rezone hundreds of acres in South Maui as the council moves to tighten conditions on the project.

With several council members offering amendments to a pending bill that would provide the needed zoning, the council decided to hold a special meeting at 9 a.m. Feb. 21 to discuss measures it hopes will offset the impact the resort's development plan will have on Maui. At that time, public testimony will be heard and council members will be able to seek additional information as they hash out the language of conditions that will be placed on the project if approved.

The conditions in the bill deal with everything from water and traffic to drainage, affordable housing, schools and bikeways.

Council Member Charmaine Tavares, who voted against the project in committee, offered language that would more stringently tie the pace of home construction to the pace of roadway improvements.

The developer would be allowed to develop 100 units after the zone change after paying a "voluntary" impact fee of \$5,000 per unit until the county enacts a permanent transportation impact fee. After that, the developer would pay whatever new fee is set in place.

The Tavares amendment would not allow development of any additional homes until an assessment is done by the county Planning Department. Any new traffic improvements must be in place before additional homes are built.

Another amendment she is offering would require the developer to provide evidence that water is available for the project prior to building permits being issued. She also wants to require wastewater effluent or nonpotable water to be used for landscape irrigation.

Council Member Dain Kane is also offering several amendments, as is Council Member Alan Arakawa.

One of Kane's amendments would require the developer to provide reports to the council every six months on its progress in complying with each condition.

"This amendment will ensure that the council . . . retains full oversight authority over the development's progress," Kane said.

One of Arakawa's amendments is designed to ensure that all conditions placed on the project earlier by the state Land Use Commission are incorporated in any council approval.

At Friday's meeting, about 40 people spoke on both sides of the issue, hammering home points that have been made in earlier hearings on the project.

Support for the project largely hinges on an economic argument — that Maui needs a steady supply of construction jobs, and the planned, slow build-out of 1,100 homes and a 100- to 200-room, time-share condominium would meet that need.

"It's the economy," said Kihei resident Robert Stewart, politely leaving off the "stupid" at the end of a sentence that became a political catchphrase in the 1992 presidential election. He said

The Maui News
February 2, 2002

the benefits of the project must be balanced against any negative impacts, and compromises should be made that allow the project to go forward.

Makena Resort Corp., which also owns the existing Maui Prince Hotel, was also praised by several speakers as being a responsible developer and a good neighbor.

Opponents said that planned projects already on the books provide plenty of opportunities for construction workers and that Maui's attraction to tourists is being ruined by overdevelopment.

"I already have visitors tell me they're not coming back," said Vicki Schulte, who owns two vacation rentals in South Maui.

She presented the council with a red basket full of eggs to demonstrate the dependence of the island on a single industry, which she said is being ruined by continued building.

"We keep looking at the same old eggs in the same old basket" for economic solutions, she said.

South Maui is already home to nightmare traffic congestion, project opponents told the council. They also are pointing to an overtapped water system, and raised concern over a lack of attention to drainage needs and erosion control.

County Water Director David Craddick clarified statements made earlier about the water situation on Maui.

There is enough water on Maui to serve a city the size of Honolulu, he said, enough water for development over the next 100 years.

"Don't confuse that with the ability to deliver water," he said of the limits on the existing county water system. He said the Iao aquifer, the main source of drinking water for Central and South Maui, has reached its limit.

"The water won't be coming from there," he said.

A fact sheet provided by Makena Resort Corp. General Manager Roy Figueiroa states that once a zoning change is approved, actual project plans can be submitted and water availability assessed. The county Department of Water Supply is working on development of water sources outside of the Iao aquifer, the company said, and the resort is already included in the county master water plan.

Makena Resort has spent about \$6 million for water source, transmission and storage through a joint venture formed in 1975 to bring water to South Maui and has used very little of the water it has developed.

The company noted that the resort is not expanding and has been designated for development since 1969.

RECEIVED January 19, 2002

02 FEB 5 AM 11:05

COMMISSION ON WATER
RESOURCE MANAGEMENT

Maile Lu'uwai
666 Pili Loko Street
Pa'ia, HI 96779

State Commission on Water Resources Management
P.O. Box 621
Honolulu, HI 96809

RE: COMMENTARY FOR MANAGEMENT OF 'IAO AND WAIHE'E AQUIFERS

Dear Commissioners:

This letter is in support of the Maui Meadow's Homeowners' Association petition requiring the CWRM to designate the 'Iao and Waihe'e aquifers as State Water Management areas.

Escalating development on Maui demands that we protect our invaluable resources. One of the primary resources is water. We need to know if our water resource is being burdened by current demands and projected usage. The 'Iao and Waihe'e aquifers must be designated as water management areas to find the answers that will ensure the protection of our water resource.

Your support of the designation is needed.

Mahalo,


Maile Lu'uwai

January 19, 2002

RECEIVED

02 FEB 5 AM 11:05

Michael Augustin
666 Pili Loko Street
Pa'ia, HI 96779

State Commission on Water Resources Management
P.O. Box 621
Honolulu, HI 96809

RE: 'IAO AND WAIHE'E AQUIFER DESIGNATION

Dear Commissioners:

This letter is in support of the Maui Meadow's Homeowners' Association petition requiring the CWRM to designate the 'Iao and Waihe'e aquifers as state water management areas.

I have lived on Maui all my life. The increase in development and spiraling population growth has placed demands on Maui's water. We need to find out whether Maui has enough water to sustain this pattern of growth. Your designation of 'Iao and Waihe'e aquifers as state water management areas is critical.

Mahalo,



Michael Augustin

SR 93

Ha'ikū, Hawai'i 96708

Feb. 4, 2002

Gil Coloma-Agaran, Chair
CWRM

Dear Chair Coloma-Agaran,

I urge you and the other commissioners to designate the 'Iao and Waiehe'e aquifers as state water management areas, as petitioned by the Maui Meadows Homeowners' Association.

Designation is long overdue. The aquifers may have already suffered permanent damage from overpumping.

I have followed water issues on Maui for almost 30 years and find this issue to be of the utmost importance.

Thank you for your consideration.

Sincerely,



Elaine S. Wender



"Isaac D. Harp"
<Imua.Hawaii@verizon
.net>

02/03/02 11:19 PM

To: <dlr_cwrn@exec.state.hi.us>
cc: <terry@maui-tomorrow.org>
Subject: Maui's 'Iao and Waihee Aquifers

RECEIVED

22 FEB 4 AM 11:33

Dear Chairman Gilbert Coloma-Agaran and Commissioners:

CC: DEPT. OF WATER
RE: CWRM PETITION

I support the Maui Meadows Homeowners Association's petition requiring the CWRM to designate both the 'Iao and Waihee Aquifers as State Water Management areas. This is simply the right thing to do particularly considering the poor condition of the water supply and strong lobby by developers for ever increasing water allocations. The State has a fiduciary duty to insure that sufficient fresh water supplies are available for Hawaii's residents, including existing and future Hawaiian Home Lands residents. Unless extraction rates are strictly controlled now, the State will not be able to meet this obligation.

Mahalo for considering my concerns in your deliberation.

Sincerely, Isaac D. Harp
Kahea Ocean Program Director
PMB 791, 843 Wainee St., F-5
Lahaina, Hawaiian Islands 96761
Ph/Fax: (808) 661-4527
Imua.Hawaii@verizon.net
www.kahea.org
}<)))))))*< >< >< ><



Hugh Starr
<starr@maui.net>

02/04/02 07:15 AM

To: dlnr_cwrn@exec.state.hi.us

cc:

Subject: Designation of the Iao & Waihee Aquifers

RECEIVED

02 FEB 4 AM 11:33

Dear Chairman Coloma-Agaran and Water Commissioners:

I support Maui Meadows Homeowners' Association petition requiring the CWRM to designate the 'Iao and Waihee Aquifers as State Water Management areas.

Having been a life-long resident of Hawaii I understand and appreciate how dependent we on Maui are upon the ground-water resources of the Iao and Waihee aquifers. I am frightened by the signs the professionals are recording about the deterioration of this resource. Enactment of the State Water Code attests to the importance we the people of Hawaii have placed in the CWRM to steward our Islands water resources.

Please accept and acknowledge this responsibility by designation of the Iao and Waihee aquifers. Thank you.

Hugh Y. Starr, Makawao, Maui



"Andrea & Topher
Dean"
<andreas@maui.net>

02/04/02 08:33 AM

To: <dlr_cwrn@exec.state.hi.us>
cc: <terry@maui-tomorrow.org>
Subject: Water Management

RECEIVED

02 FEB 4 AM 11:32

I am writing to let you know that I support Maui Meadows Homeowners' Association petition requiring the CWRM to designate the 'Iao and Waihee Aquifers as State Water Management areas.

I am shocked that there is no consensus on the amount of water in the aquifer and the amount of useage of the resource. It is not in the best interest of the public to continue allocating these resources when it is not clear to anyone how much is left. State management would conduct the necessary research and manage this area.

Sincerely,

Andrea & Christopher Dean
PO Box 343
Haiku, HI 96708
(808) 579-8898



MauiAnne@webtv.net
(Anne)

01/31/02 07:01 PM

To: dlnr_cwrn@exec.state.hi.us
cc:

Subject: Iao and Waihee Aquifers

RECEIVED

02 FEB 1 9:43

Dear Chairman Coloma-Agaran and Commissioners:

COMMISSION ON WATER
RESOURCE MANAGEMENT

I support Maui Meadows Homeowners' Association petition requiring the CWRM to designate the 'Iao and Waihee Aquifers as State Water Management areas.

Aloha
Anne Pierce
333 Haumana Rd
Haiku, Hi 96708
573-0300



Randy Ching
<crandy@maryknollhs.
org>

01/30/02 07:23 AM

To: "dlmr_cwrn@exec.state.hi.us" <dlmr_cwrn@exec.state.hi.us>
cc: "terry@maui-tomorrow.org" <terry@maui-tomorrow.org>
Subject: Designation of Iao aquifer

RECEIVED

02 JAN 31 AIO : 02

COMMISSION ON WATER
RESOURCES

Dear Chairman Coloma-Agaran and Commissioners:

I support Maui Meadows Homeowners' Association petition requiring the CWRM to designate the Iao and Waihee aquifers as State Water Management areas.

Currently, no one knows how much water Maui's aquifers contain, how much is being withdrawn, or how quickly they recharge. The State has the authority to gather this information. The State should also manage the aquifer since no one has the data for determining a maximum sustainable yield. The precautionary principle applies here: Err on the side of caution, rather than running out of water.

Until there are studies done on how much water is actually in the aquifers and who is withdrawing how much water, Maui could face a water shortage in the near future. This is too important a resource to leave to chance and haphazard planning. I hope you feel the same way.

Thank you for protecting Hawaii's water for future generations. Malama aina.

Randy Ching
1560 Kanunu St., #818
Honolulu, HI 96814
808-381-2891



elexeab@mindspring.com

01/24/02 08:53 AM

To: dlnr_cwrn@exec.state.hi.us
cc: terry@maui-tomorrow.org
Subject: Designation of the 'Iao Aquifer

RECEIVED

02 JAN 28 P12:50

Dear Chairman Coloma-Agaran and Commissioners:

As residents and homeowners on Maui we would like to express our support for the Maui Meadows Homeowners' Association petition requiring the CWRM to designate the 'Iao and Waihee Aquifers as State Water Management areas.

We have read the reports about the dropping level of the "Iao Aquifer and the unanswered questions about its actual rate of recharge and boundaries. Given the rapid rate of expansion and population growth on the dry side of the island, it seems a vital priority to ensure that Maui's water resources are not exploited beyond sustainable levels.

USGS hydrologists have explained to the Maui County Water Board that the current levels of pumping in the 'Iao aquifer are not sustainable and that many questions remain unanswered about the effects of wet vs. dry years, numbers and locations of wells that are drilled and whether or not there really is a dividing wall between the 'Iao and Waihee Aquifers.

Given the many unanswered questions and the vital nature of Maui's water resources, please take the step that is required in order to have oversight of the management of the 'Iao and Waihee aquifers, designate them as State Water Management Areas.

Thank-you for your consideration.

Bobbie Becker & Jace Hobbs
185 Mahiai Place
Makawao, HI 96768
808.572.1370

COMMISSION ON WATER
RESOURCES MANAGEMENT



"David J. Leese /
Geoffrey C. Naylor"
<dleese@maui.net>

01/23/02 02:55 PM

To: dlnr_cwrn@exec.state.hi.us
cc: terry@maui-tomorrow.org
Subject: 'Iao Aquifer Desination

RECEIVED

02 JAN 28 P12: 50

COMMISSION ON WATER
RESOURCE MANAGEMENT

Dear Chairman Coloma-Agaran and Commissioners:

I support Maui Meadows Homeowners' Association petition requiring the CWRM to designate the 'Iao and Waihee Aquifers as State Water Management areas.

Respectfully,

David J. Leese
2695 Lia Place
Haiku, HI 96708
(808) 572-5198



"Michael Reed Gach"
<mrgach@att.net>

01/23/02 06:49 AM

To: <dlmr_cwrn@exec.state.hi.us>
cc:

Subject: Iao and Waihee Aquifers

RECEIVED

02 JAN 28 PM 12:49

Dear Chairman Coloma-Agaran and Commissioners:

COMMISSION ON WATER
RESOURCE MANAGEMENT

We support Maui Meadows Homeowners' Association petition requiring the CWRM to designate the 'Iao and Waihee Aquifers as State Water Management areas.

We want responsible planning on Maui. If you do not know how much water is generated from our aquifers, how can the county responsibly make decisions? The amount of development in the Kihei/Wailea area is going beyond the limits of what the infrastructure can handle and thus is irresponsible.

Please consider how vital it is to know what our limits are so that Maui does not get over-developed and we ruin our natural resources.

Thank you for your attention in this matter.

Barbara & Michael Reed Gach, Ph.D.
2198 Auina Place
Kihei, Maui HI 96753

Email: gach@acupressure.com



Cindy Rose
<crose@hawaii.rr.com>
>

01/22/02 04:53 PM

To: <dlr_cwrn@exec.state.hi.us>
cc: <terry@maui-tomorrow.org>
Subject: Maui Meadow's Homowner's Assoc. Petition

RECEIVED

02 JAN 28 P12:49

COMMISSIONER OF WATER
RESOURCE MANAGEMENT

January 22, 2002

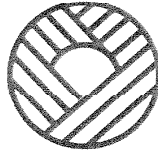
Dear Chairman Coloma-Agaran and Commissioners:

I support Maui Meadows Homeowners' Association petition requiring the CWRM to designate the 'Iao and Waihee Aquifers as State Water Management areas.

Mahalo,

Cindy Rose,
107 West Kuiaha Rd.
Haiku, HI 96708

575-9483



RECEIVED

MAUI LAND & PINEAPPLE COMPANY, INC.

02 JAN 24 P3:03

January 23, 2002

COMMISSION ON WATER
RESOURCE MANAGEMENT

Mr. Gilbert S. Coloma-Agaran
Chairperson
Commission On Water Resource Management
Department Of Land And Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809

Dear Chairperson Coloma-Agaran:

Subject: Petition To Designate Iao and Waihee Aquifer Systems
Maui, Hawaii

Maui Land & Pineapple Company, Inc. does not support the designation of the Iao and Waihee Aquifer Systems as Ground Water Management Areas. We realize that the rate that groundwater at one time was being pumped from the Iao and Waihee Aquifer Systems may have caused some deterioration of the groundwater quality. However, we believe that with the progress being made by the Department of Water Supply, County of Maui, in reducing the rate of pumping and in spreading out the locations that groundwater is being pumped from the Iao and Waihee Aquifer Systems, the quality of the groundwater will improve.

We appreciate being provided with the opportunity to provide our comments. Please do not hesitate to contact me at (808) 877-3882 if you have any questions or wish to discuss the matter.

Mahalo,

Warren A. Suzuki
Vice President/Land & Water Asset Management

/dc



"Terry Reim"
<terry@reim.net>

01/16/02 11:06 AM
Please respond to "Terry
Reim"

To: <dlnr_cwrn@exec.state.hi.us>
cc:
Subject: Iao Aquifer

RECEIVED

02 JAN 22 10:41

DEPARTMENT OF WATER
RESOURCE MANAGEMENT

Aloha from Maui,

Is this the correct e-mail address to submit comments on the CWRM's consideration of Iao Aquifer designation?

What is the deadline for public comments?

Mahalo,
Terry Reim



"Mele Stokesberry"
<holamaui@maui.net>

01/22/02 06:24 AM

To: <dlmr_cwrn@exec.state.hi.us>

cc:

Subject: Designate Iao & Waihee Aquifers

RECEIVED

02 JAN 22 10:41

Dear Chairman Coloma-Agaran and Commissioners:

I support Maui Meadows Homeowners' Association petition
requiring the CWRM to designate the Iao and Waihee Aquifers as State Water
Management areas.

COMMISSION ON WATER
RESOURCE MANAGEMENT

I've lived and worked on Maui for 32 years, during most of the development, and it is perfectly clear that without strict controls over our water there will not be a change from the prevailing lack of political will to control and protect water. The attitude of the powers that be, both elected officials and heads of agencies and departments, continues to be "develop now (\$\$\$) and figure out how we can resolve the problem later."

My address is P. O. Box 880231, Pukalani, HI 96788 and my telephone is 808-878-8015.

Mele Stokesberry
Maui District Dept. of Education, Retired



"Bob"
<bobprm@maui.net>

01/22/02 07:05 AM

To: <dlmr_cwrn@exec.state.hi.us>
cc: "terry@maui-tomorrow.org" <mailto:terry@maui-tomorrow.org>
Subject: Enough water??

Dear Chairman Coloma-Agaran and Commissioners:

I support Maui Meadows Homeowners' Association petition requiring the CWRM to designate the 'Iao and Waihee Aquifers as State Water Management areas.

I am a 25yr. citizen of Maui and I believe Maui needs to have its water resources more effectively managed! No one knows -- not the County Water Board, the USGS, the State, or the citizens of Maui -- how much water Maui's aquifers contain, how much is being withdrawn, or how quickly they recharge.

Only the State has authority to gather this information and halt continued giveaways of this precious public trust until we DO know. Please do your due diligence on this matter and protect Maui's citizens from overuse and eventual loss of this important resource.

Mahalo, Bob Schmidt
PO Box 1072
Kula, HI. 96790
878-2674

RECEIVED
02 JAN 22 A10:41
COUNTY WATER
MANAGEMENT



Robert&Risa Whiting
<oasis@ccmaui.net>

01/22/02 09:24 AM

To: dlnr_cwrn@exec.state.hi.us
cc: terry@maui-tomorrow.org
Subject: Sustainable Water supply

Dear Chairman Coloma-Agaran and Commissioners:
I support Maui Meadows Homeowners' Association petition
requiring the CWRM to designate the 'Iao and Waihee Aquifers as State
Water Management areas.
Robert and Risa Whiting
280 Hauoli Street
Wailuku, HI. 96793
808 244 4078

--
Robert & Risa Whiting
<http://www.oasis-maui.com>

COI ISOWP WATER
RESOURCE MANAGEMENT

02 JAN 22 PM 12:06

RECEIVED

Mink & Yuen, Inc.

1670 Kalakaua Avenue • Suite 605 • Honolulu, Hawaii 96826 • Telephone: (808) 943-1822 • Fax: (808) 943-1821

January 18, 2002

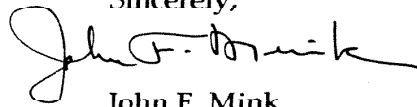
Linnel Nishioka
Deputy to CWRM
PO Box 621
Honolulu HI 96809

Dear Ms. Nishioka:

Enclosed are memoranda covering topics I would have discussed had I been present at the CWRM public hearing regarding the proposed designation of the Iao Aquifer System.

If it is not too late, I would appreciate having them added to the record of the hearing. I would also appreciate having copies distributed to each member of the Commission.

Sincerely,



John F. Mink

THE STATE OF THE IAO AQUIFER SYSTEM
A Review

John F. Mink
Mink and Yuen, Inc.
January 21, 2002

RECEIVED
02 JUL 22 AM 11:54
OFFICE OF THE ATTORNEY GENERAL
STATE OF HAWAII

The Iao Aquifer System is defined as the region extending from the Waihee River to Waikapu and reaching inland to the crest of the West Maui Mountains (see attached map). The basal aquifer portion of the System, which is the aquifer of most concern, is approximately five miles long parallel to the coast and two miles wide. It was first exploited in 1948 by Wailuku Sugar Co., but today all of the pumped water is diverted to domestic use. An Appendix summarizes the history of development of the aquifer. The Commission on Water Resources Management (CWRM) assigned a sustainable yield of 20 mgd (million gallons per day) to the System, but current draft is approximately 17 to 18 mgd. Maximum pumpage averaged 20.5 mgd in 1995.

The basal groundwater resource is robust with a fresh water depth of approximately 620 feet below sea level and a theoretical lens depth of 700 feet below sea level. The thickness of the lens has steadily decreased from the moment of first pumpage in 1948, which is natural behavior because as soon as groundwater is extracted the lens adjusts to the pumping stress. Initially the lens was about 1080 feet thick so that over the 53 years of exploitation the thickness has decreased by 380 feet. Pumpage for the entire period averaged 11.2 mgd, somewhat greater than half the assigned sustainable yield, but in recent years annual average draft has ranged from 15 to 20 mgd, averaging about 18 mgd.

The lens has responded to draft by contracting and will continue to contract until a new equilibrium is attained for the sustained average pumping. If the average draft is equal to sustainable yield, ultimate equilibrium would result in a lens thickness of about 500 feet. The equilibrium would not come about for many years.

Arguments about the status of the resource revolve about whether the water table elevation above sea level or the depth of the fresh water lens is the criterion for judging the resource's integrity. Normally the water table elevation, incorrectly called the 'head', is assumed to control the depth of the fresh water lens. But this assumption would be true only for an equilibrium condition which is not perturbed by pumping and natural variations. Because the Ghyben-Herzberg (GH) ratio is so large, 40:1 or 40 feet of fresh water below sea level for every foot above, a small change in the water table elevation, such as that induced by

pumping, magnifies the assumed effect on the depth below sea level of the lens. On the other hand, data from monitor wells that penetrate the lens to the underlying salt water provide the true depth of the lens.

The depth of the lens is a pressure phenomenon related to the contrasting densities of fresh water (density 1.000) and sea water (density 1.025). The weight of the column of fresh water is balanced by the equivalent upward pressure of the sea water. This relationship is indisputable. The assertion that the water table elevation controls the depth of the fresh water but that the deviation from the GH ratio is due to a 'lag' in adjustment of the lens is not supported by rational scientific analysis. After all, the height of the water table above sea level usually represents a very small fraction of the total weight of the fresh water column. In the Iao aquifer, for example, a water table elevation of 10 feet accounts for just 1.4% of the weight of the column of fresh water (data collected August, 2001).

The Iao aquifer is not on the verge of destruction as declared by alarmists. But the current arrangement and capacities of the wells which exploit the resource are by no means optimal. Pumping rates at individual wells are excessive, spacing between wells in a well field (i.e. Mokuahau) is too small, and depth below sea level of some of the wells is too great. These defects are correctable, though at a cost. Over the long term the corrections need to be made. The resource is not at risk under a sustainable yield of 20 mgd at this time, but the collection and analyses of more data may require an adjustment of the value.

The argument that the North Waihee Aquifer System is really an extension of the Iao Aquifer System is true in a sense because the aquifers are hydraulically connected, but Aquifer Systems are management systems, not necessarily isolated aquifers. From the moment the first well was drilled north of Waihee River a hydraulic connection was recognized, but analysis demonstrated that Waihee Valley strongly impeded the connection. The North Waihee Aquifer System extends from Waihee Valley to Kahakuloa Valley and has been assigned a sustainable yield of 8mgd. To assert that the sustainable yield of 20 mgd for the Iao System includes the sustainable yield of the North Waihee System ignores the groundwater that is generated in the North Waihee System.

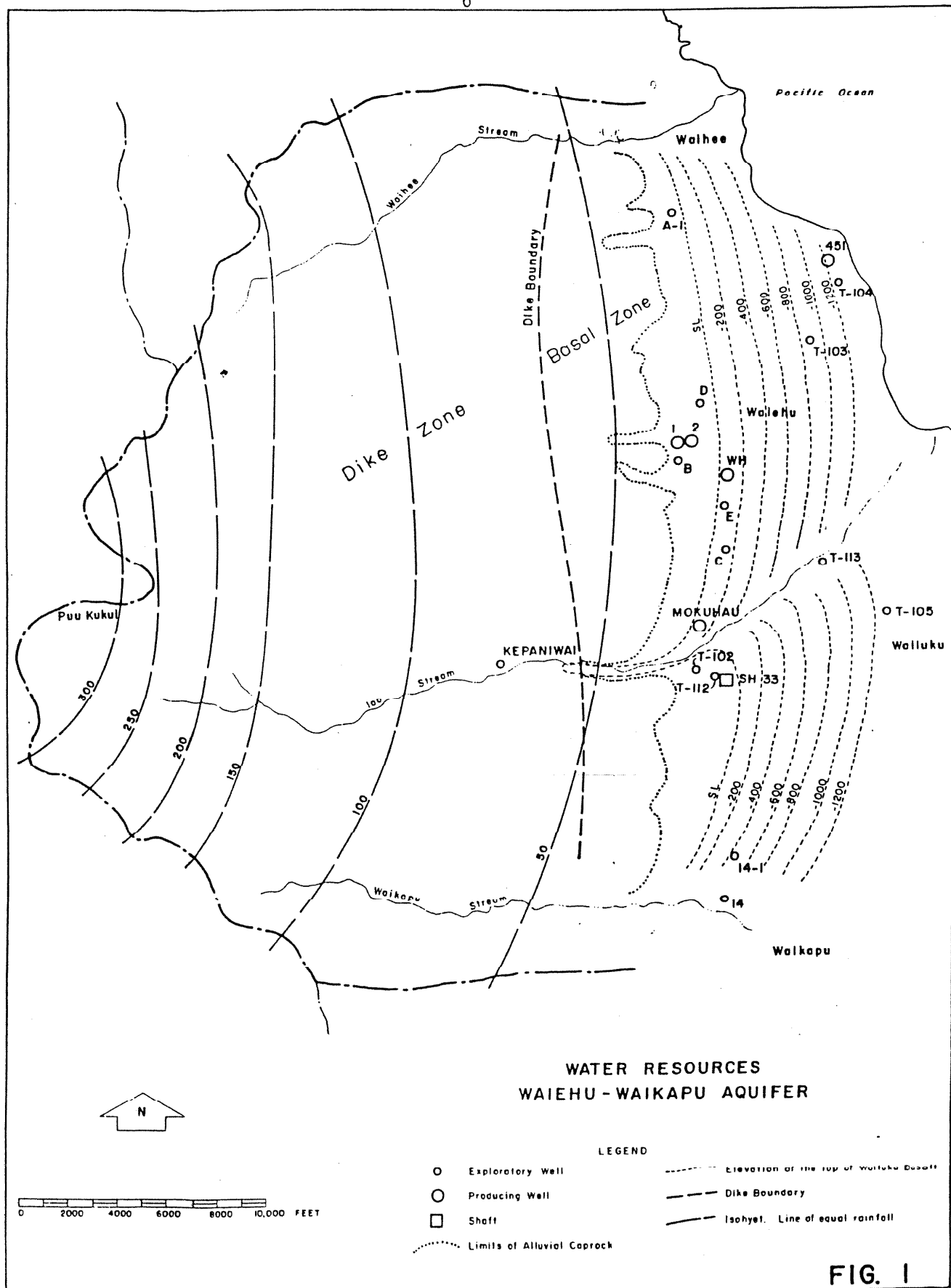
The 8 mgd sustainable yield assigned to North Waihee is a weak estimate because of lack of qualifying data. Development of the full value needs to be spread over the entire region between Waihee and Kahakuloa. Currently 4 mgd of the 8 mgd is concentrated between Waihee Valley and Makamakaole; additional development will have to be located between Makamakaole and Kahakuloa.

Alarmism about the development of drinking water sources in Hawaii is a hallowed tradition. Its value is in requiring water managers to be highly sensitive to development practices.

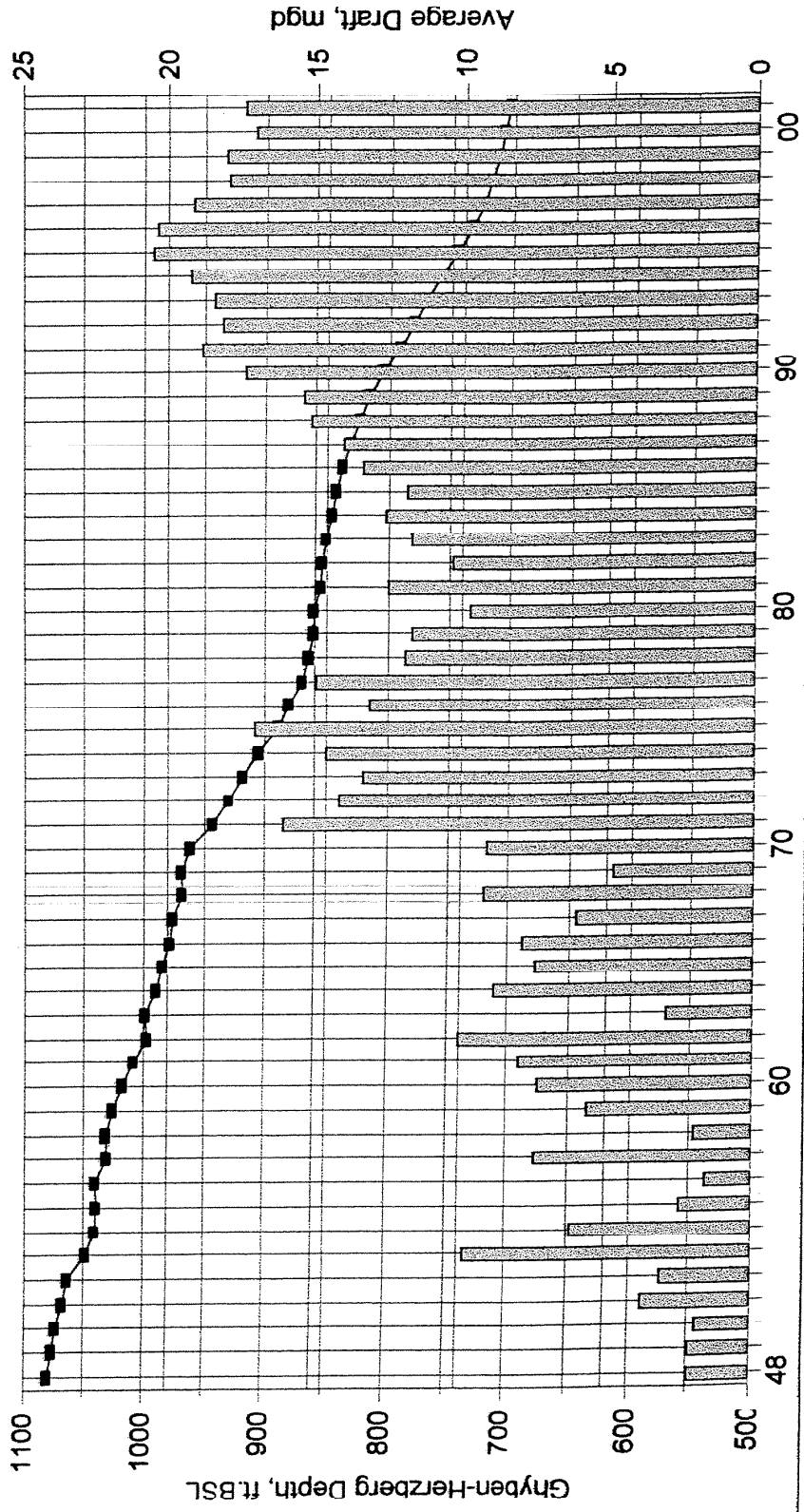
Included as appendices are two graphs along with a brief outline of the history of development of the Iao aquifer and a memorandum discussing the conditions of the aquifer.

Graph 1. Illustrates the theoretical contraction of the depth of the fresh water lens for a constant recharge rate of 26 mgd and the historical average annual pumpage. The initial depth at initial head of 27 feet before first pumpage took place was 1080 feet (27×40). Current depth is approximately 700 feet, a loss of 380 feet in 53 years, or an average of 7.17 feet per year. Since 1988, when average annual draft rose from 15 mgd to a peak of 20.5 mgd in 1995 before descending to the current draft of 17.5 mgd, the lens contracted 123 feet, an average of 9.46 feet per year. Further contraction will take place, but the rate of contraction will diminish as a new equilibrium is approached.

Graph 2. Illustrates the close match between contraction generated from the model and actual contraction as determined at the Waiehu monitor well.



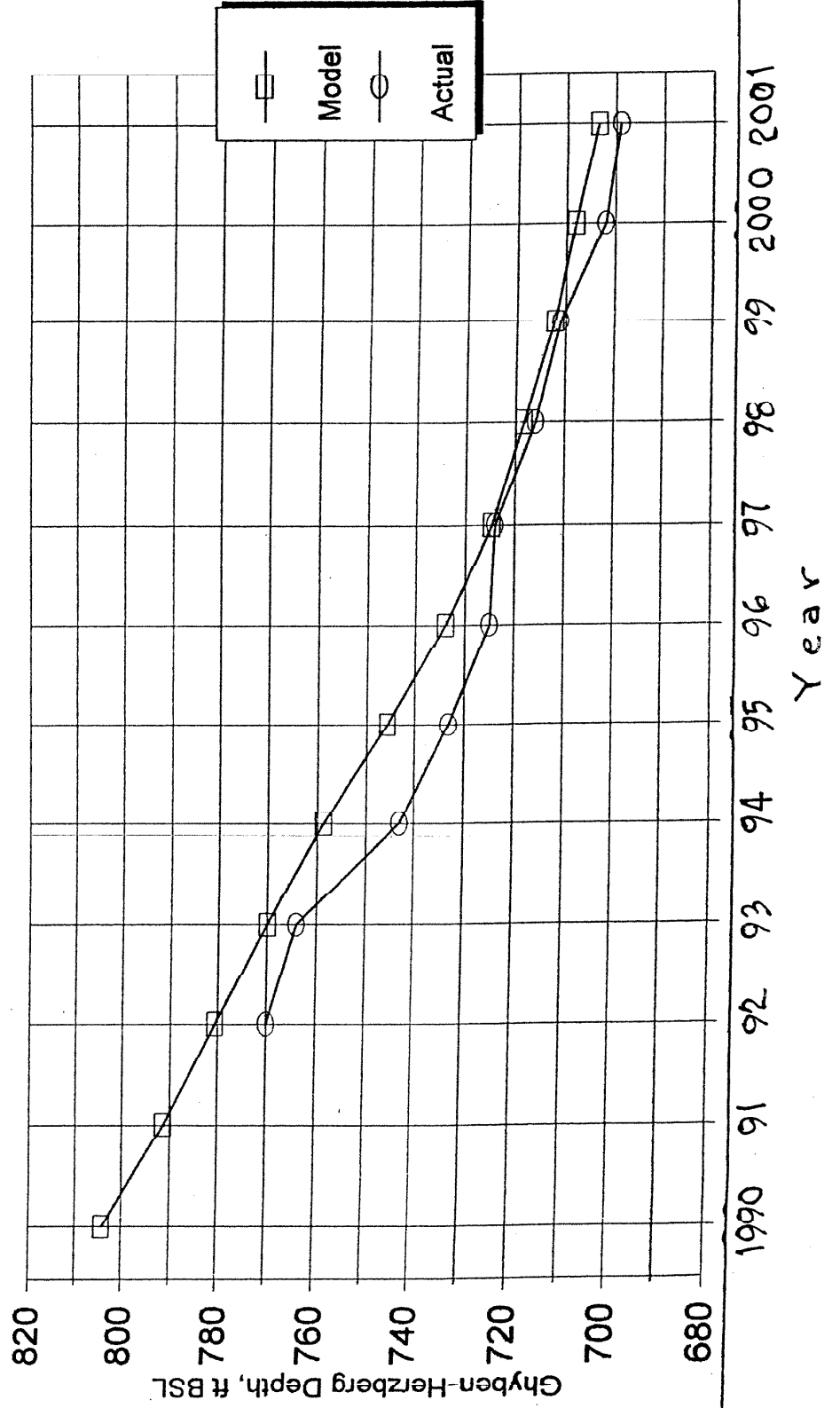
Iao Aquifer System Ghyben-Herzberg Depth of Lens



Year (19.. 20..)

Iao Aquifer System

Depth Contraction



October 22, 2001

John F. Mink, Mink and Yuen, Inc.

Brief History of Controversies Surrounding Development of the Iao Aquifer System

1. First verification of existence of large groundwater resource in the Iao region; Test Hole T-102 drilled on the south side of Iao Valley in 1940, water table elevation 27 to 31 feet above sea level.
2. Second verification in 1946 (following war years), Test Hole T-112 also south of Iao Valley, water table elevation 28 to 31 feet above sea level.
3. Construction of Wailuku Sugar Co, infiltration gallery, Shaft 33, on south side of Iao Valley. Initial water table elevation 27 to 28 feet above sea level.
4. Start pumping Shaft 33 in 1948. Maximum draft during drought year 1953 average 11 to 12 mgd; water table elevation declined 13 feet in T-112, from 27 to 14 feet. In T-102 decline of 8 feet.
5. Mokuahau well field planned, started construction 1953 and pumping in 1956. Located on north bank of Iao Valley.
6. DOWALD study 1970 estimated recharge of 60 mgd from Waikapu to Waihee Valley. Companion study by USGS, but no values given. Another study by USGS estimated recharge of 43 to 48 mgd in 2.2 mile reach across Iao Valley.
7. High estimated recharge values led to high expectation of developable groundwater. Prediction of developable water as high as 60 mgd.
8. Joint Venture created in 1975, based allocation of groundwater resources in region between Iao and Waihee on total of 55 mgd, of which the first 19 mgd to be conveyed to DWS, leaving 36 mgd for further development.
9. However, for unknown reasons, the expected yield of the region became 36 mgd.
10. After the documents of agreement were signed by the Joint Venture and the DWS, C. Brewer (Hawaiiana Investments) through Harold Luscomb hired J.F. Mink to assess the groundwater resources of the region. Preliminary conclusions were submitted in 1976 and a report in 1977.
11. The report declared that the estimates of developable groundwater were excessive and recommended that the sustainable yield be set at 20 mgd.
12. The Waiehu Heights and Waiehu wells were drilled in 1964 and 1976, respectively.
13. In 1980 a proposal was made to increase production to between 30 and 40 mgd by drilling additional wells in the region between Iao and Waihee. The proposal was abandoned.

14. In 1985 DOWALD advised DWS that the recharge value of 60 mgd in the Iao Aquifer System (now accepted as extending from Waikapu to Waihee) was excessive and that the sustainable was set at 20 mgd.
15. Also in 1985 a controversy arose as to whether the aquifer was overdrawn at a draft of 20 mgd, and DOWALD held initial hearings to determine if the aquifer should be 'designated'. The controversy extended into the 90s and has not yet been put to rest.
16. The sustainable yield of 20 mgd was included in the State Water Resources Protection Plan and accepted by CWRM.
17. In 1991 another hearing was held concerning potential State control of the aquifer. The USGS stated that there was a strong likelihood that pumpage of 20 mgd could be sustained on a long term basis, and that the sustainable yield of the aquifer appears to be greater than 20 mgd.
18. In September, 1992 (Maui News 9/17/92) at an appearance before the BWS, the USGS said that there "could be an additional 4 to 8 mgd" of sustainable yield in excess of the control value of 20 mgd. At that time draft averaged 18.5 mgd.
19. In April, 1997 (Maui News 4.17/97) a spokesman for the USGS told the Board that "no doubt if drilling in the aquifer is spread out, then the sustainable yield will go up". Earlier in the year (Maui News 1/16/97) the spokesman declared, "available data indicates the aquifer is healthy". At that time the average draft was 20.5 mgd.
20. CWRM decided not to designate the Iao Aquifer System after the hearings (Maui News 8/12/97).
21. In a 1996 USGS report (P. Shade) it was concluded that the natural recharge rate to the Iao Aquifer System was 35 mgd, which is about 10 mgd greater than employed in the Mink report setting sustainable yield at 20 mgd.
22. Year 2000: a USGS report concluded that average pump rates near 20 mgd may result in sea water intrusion into some wells that are too deep. These deep wells would eventually draw water from a rising transition zone. This conclusion does not invalidate a sustainable yield of 20 mgd but rather focuses on the sub-optimal means of extracting water from the lens.
23. In August, 2001, and previously in January, 2001, DWS conducted a recovery test on the Iao Aquifer by shutting down all pumps. The January shutdown lasted only about 6 hours, while in August shutdown was sustained for 15 hours. By the end of the 15 hours the water level at Test Hole B had recovered 0.6 feet, and recovery followed a smooth curve suggesting that full recovery would occur in about 3 months. Full recovery means that the water table elevation above sea level would correlate with the depth of the fresh water lens in accordance with the Ghyben-Herzberg principal.

THE LAO AQUIFER SYSTEM
Sustainable Yield Debate

November 26, 2001

John F. Mink
Mink and Yuen, Inc.

I attended the Main Board of Water Supply meeting on October 22 concerning the Lao Aquifer System, and since then have read newspaper accounts of the CWRM session on the same topic as well as editorials and op-ed pieces. I am, to say the least, concerned that speculative opinions have replaced rational scientific discourse in the arguments about the capacity of the aquifer system to yield potable water.

Reliance on water table measurements as the criterion establishing the status of the aquifer fails to take into consideration the instability of the water table caused by natural and pumpage-induced perturbations. It is frivolously unscientific to say that the bottom of the lens is not in balance with the water table because of a lag in movement of the interface due to inertia, or for some other indeterminate reason. There is no credibility to this argument. It is a speculation never subjected to investigation. To argue that the movements of the water table determine the volume of water in the aquifer is like believing that the size of an elephant can be determined by studying the swishings of its tail.

To arrive at a better understanding of basal lens dynamics, consider the pressure of a column of fresh water resting on sea water under Dupuit horizontal flow conditions. Dupuit flow is an accurate representation of flow in a thick lens at a distance from the discharge front of 1.5 to 2 times the depth of flow in the lens (Bear, Groundwater Hydraulics). A lens behind a caprock easily conforms to this requirement because the hydraulic gradient is very small, normally less than .0004. The pressure at the base of the column of fresh water is equal to the sea water pressure at the interface. The pressure of the fresh water column is, $P=Iw$, in which w is specific weight of the fresh water and I is the depth of the column. Hydraulic head, H , is defined as P/w (Bernoulli), and therefore if the origin of the coordinate system is on the interface, $H=I$, the depth of the fresh water column. At the Waiehu monitor well in the Lao Aquifer System the depth, z , of the fresh water column is 700 feet below sea level, and the theoretical total depth is $z+h$, where h is the water table elevation above sea level. The theoretical value of h is obtained from the pressure balance equation,

$$\rho_s z = \rho_f (z+h)$$

and,

$$h = ((\rho_s - \rho_f) / \rho_f) z$$

in which the salt water density, $\rho_s = 1.025$, and the fresh water density, $\rho_f = 1.000$, yields, $h = .025 z$. At the Waiehu monitor $z = 700$ feet to the middle of the transition zone, and therefore theoretically, $h = 17.5$ feet. The measured water table elevation is approximately 7 feet above sea level, however, but the difference between the actual and theoretical values is caused by drawdown due to pumping in a bounded aquifer.

In the Meyer-USGS evaluation the state of the aquifer system is defined by the water table elevation rather than by the depth of the fresh water column. The water table is fickle; it varies over a considerable range in response to pumping whereas the bottom of the lens adjusts incrementally to pumping and other perturbations. There is no evidence that a lag occurs in the adjustment; that suggestion is not based on sound scientific analyses.

The manner of asserting that the transition zone and the 50 percent sea water isochlor has been rising over the years since pumping commenced is alarmist rather than measured. Once the initial equilibrium of the system is disturbed by pumping, inevitably both of these phenomena will take place as a new equilibrium is approached, but so long as the pumpage does not exceed the recharge input an equilibrium with a positive hydraulic head will become established. As the equilibrium is approached, the rate of rise of the 50 percent isochlor flattens, as is the case in the Lao Aquifer System.

RAM is a conservative analytical model. Assuming a recharge value of 26 mgd for Lao, which is 9 mgd less than the USGS value of 35 mgd, at a sustainable yield of 20 mgd the hydraulic head relative to sea level in the mid portion of the aquifer will stabilize at approximately 14 feet by the year 2060. Unfortunately the wells exploiting the aquifer are not optimally located and some are too deep, and the extraction rates of the Waiehu and Mokuahau wells are excessive. These effects are correctable, however.